CONTRACTOR FINANCE FOR ACQUISITION MANAGERS (CFAM) (BCF 205)

Course Description

COURSE LENGTH: 1 week

OBJECTIVES:

- Provide an understanding of defense contractor financial motivation and constraints and their impact on defense system acquisition programs.
- Provide an understanding of defense contractor financial operations and how individual elements of the process fit together.
- Provide an understanding of contractual finance issues which effect the attainment of systems acquisition cost, schedule and technical performance goals.
- Enhance the ability to identify and resolve financially oriented problems and avoid "surprises" in a system acquisition program's financial status.

CONTENT:

- Fundamentals of financial management.
- Key issues in corporate finance.
- Fundamentals of contractor finance.
- Key issues in contractor finance.
- Financial management and operational considerations.

METHODS:

The course is presented through lecture/discussion, case studies, and guest lectures. Student preparation is through lesson reading assignments, case preparation, and problem solving.

REQUIREMENTS:

Military officers in the grade of 0-3 and above, civilian employees GS-11 and above, and selected industry representatives. The course is designed for acquisition managers, key members of their staff, and management level personnel from organizations that support the systems acquisition efforts. Anyone who has dealings with contractors and a non-financial education and background will benefit.

CONTRACTOR FINANCE FOR ACQUISITION MANAGERS (BCF 205)

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- **Provide an understanding of defense contractor financial operations and how individual elements of the process fit together.**

- **Provide an understanding of contractual finance issues which affect the attainment of systems acquisition cost, schedule, and technical performance goals.**

- **Enhance the ability to identify and resolve financially oriented problems and avoid "surprises" in a system acquisition program's financial status.**

CONTRACTOR FINANCE FOR ACQUISITION MANAGERS (BCF 205)

Major Subject Areas

I. Fundamentals of Financial Management -- An explanation of financial management concepts, terminology, and analytical techniques

II. Key Issues in Corporate Finance -- Establishing a framework of reference

III. Fundamentals of Contractor Finance -- An explanation of contract types, terms, and conditions

IV. Key Issues in Contractor Finance -- Financial aspects of the contractual relationship between government and industry

V. Financial Management and Operational Considerations -- Day-to-day challenges facing the division manager and the government acquisition manager

VI. Aerospace and Defense: An Industry in Transition -- The shifting complexion of the defense industrial base and its impact on systems acquisition

DEFENSE SYSTEMS MANAGEMENT COLLEGE

CONTRACTOR FINANCE FOR ACQUISITION MANAGERS

Key Personnel

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EMERGENCY TELEPHONE NUMBERS (INCOMING):

During Duty Hours: DSN 655-3438
Commercial: (703) 805-3438

During Non-Duty Hours: DSN 655-5452
(24 hours) Commercial: (703) 805-5452

These numbers are for the Fort Belvoir Military Police desk. Callers must identify person they are trying to reach as a DSMC student, specify the student's class, and give their first and last name, and rank. Messages will be forwarded to DSMC officials who will contact you. For this reason, we must have your local address and telephone number.

Military Police: (703) 805-1104

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LESSON ASSIGNMENT SHEET

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CONTRACTOR FINANCE FOR ACQUISITION MANAGERS

CFAM 511 - INTRODUCTION TO CONTRACTOR FINANCE

Objectives: For students to understand:

- A business is a system of cash flows.
- That money has time value.

Desired Learning Outcomes: The student should be able to:

- Know three categories of cash inflows.
- Know four categories of cash outflows.
- Know the cash flow cycle.
- Know time value of money concept.

Assignment:

STUDY: Teaching Note: "Business: A System of Cash Flows".

ESPT: 30 minutes.

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CONTRACTOR FINANCE FOR ACQUISITION MANAGERS

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TEACHING NOTE

BUSINESS: A SYSTEM OF CASH FLOWS

PURPOSE AND SCOPE

This teaching note will introduce you to the following concepts:

- cash inflows,
- cash outflows,
- the cash flow cycle, and
- the time value of money.

DISCUSSION

CASH FLOWS

A business is a system of cash flows—inflows and outflows. The long-term objective of a business is to have cash inflows from customers exceed cash outflows for expenses. Cash has time value and is not free to a business. A business must earn its cost of capital (i.e., the cost associated with attracting owners and lenders to invest cash in the business).

Cash Inflows

There are three sources of cash inflows:

1. *Owners* - Owners (e.g., stockholders in a corporation) contribute cash to start or expand a business. The cash is used to purchase assets or pay expenses incident to creating a product or products that customers will buy.

2. *Lenders* - Lenders provide cash on a temporary basis to finance such assets as inventories and equipment or to meet current cash needs like payrolls and accounts payable. Almost all businesses use some form of short-term borrowing (i.e., debt) for temporary financing. Long-term debt is used for long-term financing requirements such as equipment, buildings and land.

3. *Customers* - Nothing happens in a business unless there is a sale or the promise of a sale. All activity in a business is focused on generating cash inflows from

customers to replace cash outflows from business expenses. For a business to be viable in the long term, cash inflows from customers must exceed cash outflows for expenses by at least the cost of capital.

Cash Outflows

There are four categories of cash outflows:

1. *Operating Expenses* - Cash is used to pay day-to-day expenses for everything from the production shop to the executive offices. These expenses tend to be repetitive—payroll to be met every week or every two weeks, utilities to be paid each month, and suppliers on regular payment schedules.

2. *Investments* - In order to manufacture products, provide inventories of materials or goods, or create services for sale to the customer, a business invests cash in assets. Current assets are cash, accounts receivable, and inventories. Fixed assets are equipment, buildings and land.

3. *Financing Activities* - A financing activity is any action that obtains or returns cash to an owner, lender, or creditor. Owners contribute capital (i.e., cash) by purchasing stock. Creditors provide materials, utilities, or services in exchange for a deferred cash payment. Lenders (e.g., banks, mortgage companies, pension funds, etc.) rent cash to a business for the short or long term in exchange for interest payments. Profits kept in the company (retained earnings) become part of owners equity and are an important source of financing for business growth. Profits not retained are passed to stockholders as dividends.

4. *Government* - Cash payments must be made for taxes, such as Social Security (FICA), unemployment (FUTA), property, income and many others.

Cash Flow Cycle

The system of business cash flows is a six-step process.

STEP 1: *Cash is accumulated to form or expand a business.*

Cash inflows from owners and lenders form the initial capital of the business. The first cash inflows come from owners, since lenders generally want to see a vested owner interest before they will participate.

STEP 2: *Cash is converted to tangible assets.*

Cash is useful only for buying assets, paying expenses or dividends. It is the assets that produce the goods or services that attract customers. Current assets are cash, accounts receivable, and inventory. Fixed assets are equipment, buildings, and land. Except for cash, each of these assets is acquired or created to attract customer revenues.

STEP 3: *Assets are consumed to produce a product or service*.

Assets such as inventories of raw material, equipment, and buildings are combined with utilities, wages, and salaries to produce a product or service for sale to the customer. Manufacturers combine raw material, wages, and machine time to create finished goods. Merchandisers purchase finished goods for retail sale. Service providers acquire the essential technical skills and equipment to meet customer needs.

STEP 4: *The product is sold to customers.*

Sales revenues from customers–the result of delivery of a product or service–is the most important event to a business.

STEP 5: *The customer pays cash to the business enterprise.*

The customer pays cash for the product or service. The cash payment represents a return of the cost of all the assets consumed, expenses incurred and any profit. Any cash payment that does not at least return costs incurred results in a loss to the business.

STEP 6: *The business enterprise decides what to do with the cash.*

Cash received from the customer is used for one or more of the following:

- Pay current expenses such as wages, utilities, creditors, etc.
- Pay interest on or return borrowed cash to lenders.
- Acquire new or replacement assets.
- Distribute profit to owners or return owner investment.

THE TIME VALUE OF MONEY

Cash has value because it can be used to buy goods and services to consume today or it can be invested to grow into even more buying power tomorrow. Since postponing consumption creates the risk that tomorrow's purchasing power will be less than today's, persons who have excess cash demand compensation for postponing consumption. Lenders also expect to be compensated for risk. The compensation is in terms of the growth rate of their initial (i.e., principal) amount of cash. The compensation required to postpone consumption is the "Time Value of Money," better know as interest.

The time value of money is a cost of doing business. For example, simple multiplication of the monthly mortgage payment for a house by the total number of payments required will reveal that the total amount of cash payments far exceeds the original price of the house. The difference between the purchase price and the total number of payments is simply the interest cost for the amount borrowed. The sale of a house for more than the purchase price does not necessarily yield a profit. If the interest cost of the loan is added to the original purchase price, the apparent profit could be reduced to a loss.

The principle illustrated above holds true in business. If a business is charged 10% interest at the bank, the cost to the business of every $1 of asset value financed by the bank loan is $0.10 per year. An asset acquired for $100 and held for one year will have a total cost of $110 (the original $100 cost plus $10 for time value of money). Only a sales price of a $110 will recover the cost of capital; and only a sales price of over $110 will result in a profit. A sales price of less than $110 will have an adverse affect on the value of the business.

Cash Accumulation

Persons and businesses earn cash by providing something of value to someone with cash. Cash for investment comes from the postponement of consumption by persons with cash to spend. Consumption will be postponed only if the potential return is large enough to compensate for the risks associated with a specific investment medium.

Banks, savings and loans, credit unions, insurance companies, and investment companies are financial intermediaries in the business of accumulating cash from individuals and investing it. Typical investments are loans or stock purchases. The objective is to earn their cost of capital plus a little more as compensation for their efforts.

Businesses get cash from individuals or financial intermediaries such as banks and insurance companies. The cash is invested in assets that will produce goods or services for sale to customers. The objective is to earn enough cash to cover the cost of creating the product, the cost of capital, plus a little more.

Risk and Time Value of Money

Since cash has time value, investors will not rent their cash unless they are compensated for the risks involved. The following are risks associated with the time value of money.

1. *Purchasing power risk*

   This is the risk that inflation will reduce purchasing power below what the lender had when he chose to invest his cash.

   Example: At a 10% inflation rate, it will require $2 in seven years to buy what $1 buys now.

2. *Maturity risk*

   Maturity risk refers to the risk of having to sell an investment before it matures, if interest rates have changed.

   Example: If an individual buys a U.S. treasury bond, earning 10% interest, that matures in five years, he must wait until the maturity date to get the principal returned and earn the 10% interest. If he needs his money sooner, and market interest rates have gone up to say 15%, he will have to lower the price on the bond (i.e., discount it) until the return to the new owner equals 15%. This is often referred to as the "seesaw effect". As market interest rates increase, market prices decrease.

3. *Marketability risk*

   This is the risk of being able to sell the investment before it matures. The higher the risk the lower the marketability. When financial investment is very marketable, it is referred to as a liquid investment. U.S. Treasury securities are very marketable, and hence very liquid. The government securities of Russia are not.

4. *Default risk*

   Default risk is the risk of not getting your principal and/or interest payments on time or at all. Some investments (e.g., insured savings accounts) are guaranteed to return at least the principal amount. U.S. Government securities are said to have little default risk because the government can always borrow or tax to raise the cash to meet maturing Treasury securities. Default risk is present in every business. Even large corporations have turned to the bankruptcy courts, admitting that they do not have sufficient cash flow to pay principal to lenders.

5. *Risk and required return*

   As risk increases, so does the compensation required by the investor to entice him to part with his cash. The risk-free time value of money would be the amount of interest charged on an investment with virtually none of the four risk elements outlined earlier. An example would be the effective rate of return on a U.S. Treasury security that matures in not more than 30 days, essentially an interest-earning cash account. This interest rate forms the floor or base from which virtually all competitively set interest rates in the world are determined. The required rate of return for any investment, whether it is for a U.S. Treasury security with a short maturity or for the establishment of a business with a new product, will be set by investors' perceptions of the degree of risk for each of the four risk categories defined earlier. The 10% charged by the bank in the earlier example may have been determined this way:

Risk Free Interest Rate	5%
Maturity Risk	1%
Marketability Risk	1%
Inflation Risk	2%
Default Risk	1%
Required Rate	10%

LESSON ASSIGNMENT SHEET

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CONTRACTOR FINANCE FOR ACQUISITION MANAGERS

CFAM 612 - UNDERSTANDING FINANCIAL REPORTING OF DoD CONTRACTORS

Objective: For students to understand:

- The format and managerial considerations affecting financial statements.

Desired Learning Outcomes: The student should be able to:

- Identify the fundamental accounting concepts used to determine the appropriate financial statement values.
- Identify the purpose and main elements of the balance sheet, income statement, and statement of cash flows.
- Differentiate between: a) Expenses versus cash expenditures, and b) Revenue versus cash receipts.
- Explain the purpose of cash flow analysis and difference between sources and uses of cash.

Assignment:

STUDY: Teaching Notes: "Financial Reporting", Balance Sheet", "Income Statement", "Depreciation", "Cash Flow Versus Income", "Recognition of Profit/Loss on Government Contracts", "Cash Flow Statement".
SCAN: How to Read a Financial Report (to be separately distributed).
SCAN: Example of Defense Contractor Financial Statements (to be separately distributed).

ESPT: 2 hours.

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TEACHING NOTE

FINANCIAL REPORTING

PURPOSE AND SCOPE

This teaching note will acquaint you with the common formats for financial reporting.

DISCUSSION

Publicly owned companies prepare annual reports to describe the financial activities and condition of the company to interested parties including investors, creditors, and the Security and Exchange Commission. There are four basic financial report formats presented in an annual report. They are generally referred to as:

1. *The Balance Sheet*

   The Balance Sheet displays the financial structure of the company at a point in time. It describes in monetary terms the assets owned by the company and the claims against those assets by the creditors and owners.

2. *The Income Statement*

   The Income Statement displays the results of the business activities of the company for the accounting period. This form presents the "bottom line" profit or loss for the period.

3. *The Statement of Cash Flows*

   The Statement of Cash Flows provides information on cash receipts and cash payments with cash flows classified according to operating, investing, and financing activities of the company.

4. *Statement of Retained Earnings*

   The Retained Earnings Statement reconciles the retained earnings account from the current year's balance sheet to the retained earnings account on the prior years balance sheet. This reconciliation includes adjustments for income and dividends during the period.

The four reports listed above provide the basic information reported to the public. The reports are prepared in accordance with "Generally Accepted Accounting Principles," which are rooted in the ten accounting concepts listed below:

1. *Money Measurement* - Accounting records show only facts that can be expressed in monetary terms.

2. *Entity* - Accounts are kept for business entities as distinguished from the persons associated with those entities.

3. *Going Concern* - Accounting assumes that a business will continue indefinitely.

4. *Cost* - Assets are entered on the accounting records at the amount paid to acquire them.

5. *Dual Aspect* - Assets = Equities.

6. *Realization* - Revenue is recognized when goods or services are delivered and in an amount that is reasonably certain to be realized.

7. *Matching* - Costs are matched against the revenues of a period.

8. *Conservatism* - Provide for all losses; anticipate no profits.

9. *Consistency* - The same method should be used for a given type of transaction from one period to the next.

10. *Materiality* - Disregard trivial matters; disclose all important matters.

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TEACHING NOTE

THE BALANCE SHEET

PURPOSE AND SCOPE

This teaching note presents the format for reporting corporate financial condition.

DISCUSSION

One of the primary formats for displaying financial information about a company is the Balance Sheet. The Balance Sheet expresses the financial condition of the firm at a point in time as assets and equities. Assets are things of value owned by the firm. Equities are claims against those assets by creditors (liabilities) and owners (stockholders' equity).

In viewing the following Balance Sheet format be aware that:

1. A Balance Sheet is valid only for a fixed point in time. In other words, it is a snapshot of financial condition.

2. A Balance Sheet expresses aspects of a firm's current condition which can be expressed in monetary terms. It does not, for example, tell about the number or quality of personnel, the firm's reputation, or market share.

3. A Balance Sheet usually shows assets at the cost paid for them. They may be written down if there is evidence that the true value is less than the amount shown on the books.

4. A Balance Sheet must always balance. This means that the total value of all assets equals the total value of the liabilities and stockholders' equities.

5. The left side of the Balance Sheet shows the assets (things of value) owned by the company. Assets can also be viewed as the investments of the company. The left side of the Balance Sheet can be broken down into three categories:

a. Current assets — cash and those assets expected to be converted to cash during the next year;

b. Fixed assets - plant and equipment;

c. Other assets - intangible assets which do not fit into the current or fixed categories.

6. The right hand side of the Balance Sheet (liabilities and stockholders' equity) shows the sources of financing which provided the company with the ability to invest in assets. The right hand side of the Balance Sheet lists nothing of value (i.e., no assets). The right hand side shows the claims against the assets by the owners and creditors based on their relative contribution to the financing. This concept—that the right hand side of the Balance Sheet shows simply the sources of financing—is, perhaps, one of the most difficult for students new to accounting.

XYZ CORPORATION
SAMPLE BALANCE SHEET
AS OF DECEMBER 31, 19__

CURRENT ASSETS (CA):
(Convertible to cash within 1 year.)

CASH:
(On hand or in bank and immediately available.)

ACCOUNTS RECEIVABLE:
(Due from customer.)

INVENTORIES:
(Raw material, work in process, finished goods.)

FIXED ASSETS (FA):
(Tangible assets of a relatively fixed or permanent nature.)

MACHINERY AND EQUIPMENT:

BUILDINGS:
(Manufacturing facilities, office buildings, etc.)

LAND:
(Shown at cost. Not subject to depreciation.)

TOTAL ASSETS (TA)

CURRENT LIABILITIES (CL):
(Money, goods or services owed and due within 1 year.)

ACCOUNTS PAYABLE:
(Owed to suppliers for goods and services received.)

ACCRUED WAGES:
(Owed to employees but not yet paid at end of accounting period.)

ACCRUED INTEREST:
(On notes or bonds -- due but not yet paid.)

ESTIMATED TAXES PAYABLE:
(Payroll taxes, income taxes, sales taxes, etc.)

NOTES:
(Loans from banks.)

LONG TERM DEBT (LTD):
(Debts owed to outsiders and not due for a comparatively long time. Principal only. Interest listed as a current liability if currently due but not paid.)

STOCKHOLDERS' EQUITY (SE):
(Residual value of the firm accruing to the owners.)

COMMON STOCK:
(Shown at par value of shares outstanding.)

RETAINED EARNINGS:
(The total of all revenues less the total of all expenses and all dividends paid since incorporation of the firm.)

TOTAL EQUITIES (TE)

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TEACHING NOTE

INCOME STATEMENT

PURPOSE AND SCOPE

This teaching note presents the format of the income statement and its underlying accounting principles. As an acquisition manager, you must be familiar with these concepts in order to communicate effectively with the contractor financial community about "income."

DISCUSSION

The income statement is one of the basic elements of an organization's financial reporting system and displays what is commonly referred to as "the bottom line." The income statement, balance sheet, statement of cash flows, and statement of retained earnings, describe the total financial position of the company.

The income statement is a monetary representation of the revenues and related expenses for a particular accounting period. While the balance sheet is considered a snapshot of the financial position of the organization at a specific point in time, the income statement represents transactions over a period of time. The income statement, therefore, serves as the financial bridge between two balance sheets.

The construction of the income statement follows a logical sequence and can be broken down into three major components:

1. *Revenue*

   Revenue is the monetary quantification of the sales that occurred during the period covered by the income statement. Revenue is not recognized on the income statement until it has been realized. Realization is generally considered to have occurred when:

- the goods or services have been substantially completed and the sale is certain to occur;
- an exchange of assets between the buyer and seller has occurred; and

- the asset received by the seller is cash or is convertible to cash within a reasonable period of time.

When these criteria have been met, it is considered that revenue has been realized and it is accordingly recognized (recorded) on the income statement.

2. *Expenses*

   The expenses shown on the income statement are either expenses incurred during the period (e.g., direct labor, rent, or utilities), or else represent the consumption of assets acquired in prior periods (e.g., depreciation, inventory, or the amortization of lease rights or leasehold improvements). Assets acquired in prior periods that provide benefit to the current and future periods are carried on the balance sheet until they are consumed in the generation of revenue. The important concept here is that the income statement attempts to match the revenue generated during the period with the expenses incurred in generating that revenue.

3. *Income*

   The result of deducting the operating expenses from operating revenue is commonly referred to as "income from operation" or "operating income." Organizations normally incur other kinds of expenses—notably interest expense—which are not considered operating expenses and which must be deducted from the operating income to arrive at income before taxes. The last step, deducting the tax expense from income before taxes, results in net income. Assuming no dividends are paid to stockholders, the net income is added to the "Retained Earnings Account" in the equity section of the balance sheet.

It is important to keep in mind that the income statement reflects the results of operations during the year and does not necessarily portray actual cash flow during that same year. For example, a large portion of the sales could be credit transactions and may not represent actual cash received until a following accounting period. Similarly, depreciation is an expense item but does not represent a cash disbursement. It is inappropriate, therefore, to consider net income and its accumulating account, retained earnings, as representing cash available to the organization.

THE INCOME STATEMENT

COMMENTS

REVENUE for the period can be from sales as shown here or from other sources, such as royalty receipts on patents and copyrights or receipts for services rendered.

REALIZATION CONCEPT requires that the revenue recorded here be attributable to goods or services delivered during the accounting period.

MATCHING CONCEPT requires that the cost directly associated with generating the revenue realized during the period be expended during the same period. In similar vein, the matching concept requires that any costs which cannot be charged directly against the revenue, yet which do not benefit a future period, must be expended.

OPERATING INCOME is that income which has been generated as a result of the firm's normal line of business.

NONOPERATING INCOME AND EXPENSES are those items generated outside the normal sphere of business operations even though they may occur quite regularly.

INTEREST is considered a non-operating expenses; however, it is reported separately here to emphasize its importance to the financial manager.

TAXES are computed on earnings after interest expense is deducted. In fact, all the expenses shown above the line titled "Earnings Before Taxes" will have an impact in the firm's taxable income.

FORMAT

INCOME STATEMENT

SALE(S)

- COST OF GOODS SOLD

GROSS INCOME

- GENERAL & ADMIN EXPENSES

- DEPRECIATION

+ NONOPERATING INCOME

- NONOPERATING EXPENSES

EARNINGS BEFORE INTEREST & TAXES (EBIT)

- INTEREST

- TAXES

*NET INCOME = NET PROFIT

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TEACHING NOTE

DEPRECIATION

PURPOSE AND SCOPE

This teaching note explains the concept of depreciation as it relates to program costs.

DISCUSSION

Depreciation is a charge or expense to current operations for the use of tangible capital assets (such as a building or equipment) with a life greater than one year. Depreciation distributes the cost of the asset over its estimated useful life. When a company buys a building or a machine, it generally expects to benefit from that purchase for a number of years. So the company records the acquisition cost of the item on the asset side of the balance sheet. In each subsequent accounting period, an appropriate portion of the cost is charged off as an expense incurred in generating the current sales. Depreciation charges are based on the cost of an asset and not necessarily its true economic value.

There are many acceptable methods for determining how much of the asset's cost should be depreciated each year, all of which are acceptable under the proper circumstances. The use of different depreciation methods simultaneously for the same asset is both legal and appropriate as long as the charges are calculated in a systematic and logical manner.

Contractors usually calculate a different amount of depreciation depending upon whether it is for:

1. *Financial reporting to the public*

   For financial reporting, depreciation may be done under:

   a. Straight line method, whereby depreciation is determined by dividing the acquisition cost of the asset less its estimated salvage value by the number of years of expected life.

b. Accelerated method, used when the amount of depreciation calculated exceeds the amount that is determined by applying the straight line method. Examples of accelerated techniques include sum-of-the-years and double-declining balance. It is not necessary for you to know how to calculate accelerated methods but is important to recognize that they result in greater depreciation charges in the earlier periods than does the straight line method.

2. *Tax reporting to the IRS*

   For tax reporting, depreciation may be done under:

   a. Straight line method.

   b. Accelerated method.

   c. Rules allowed by the IRS called Accelerated Cost Recovery System (ACRS). Contractors usually elect the ACRS method because it allows the greatest amount of depreciation in the early years. Greater depreciation expense reduces the income reported to the IRS and thereby reduces the taxes the company must pay during the early years of asset life.

3. *Cost proposal reporting or cost reimbursement reporting on government contracts*

   For proposing or charging depreciation to government contracts, the provisions of Cost Accounting Standard 409 apply, requiring that a contractor keep records documenting the historical longevity of company assets. This historical life is used to determine the expected life of similar assets. Accordingly, the depreciation charges allowed for government contracts costing under CAS 409 will usually be less than the methods used for financial reporting and taxes.

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TEACHING NOTE

CASH FLOW VERSUS INCOME

PURPOSE AND SCOPE

The purpose of this teaching note is to familiarize the acquisition manager with the distinctions between income, as reflected on the income statement, and cash flow. The understanding of this distinction is essential if effective discussions with industry about the financial implications of government contracts are to be conducted by the acquisition manager.

DISCUSSION

One of the basic mistakes made by users of financial information is to assume that the revenue reflected on the income statement is equivalent to cash inflows and that expenses are analogous to cash outflows. The result of these assumptions is the mistaken belief that net income is the net cash generated during the period.

The accrual method of accounting (used by all corporations) requires the assignment of revenue and expenses to the periods in which they are earned or incurred, without regard for the period in which the actual cash transaction occurs. The impact of the accrual method becomes apparent when sales made on credit are analyzed. When credit sales are made the buyer is allowed a specified time for payment. As a result, it is a virtual certainty that a portion of the sales recognized in the period the sale took place would not represent cash inflows until the period when the customer paid. During the time between the sale and the payment, the seller would carry the asset "Accounts Receivable." Thus, to assume that sales represent cash inflows is incorrect and may lead to erroneous conclusions.

Similarly, expenses reflected on the income statement do not necessarily represent cash outflows. A classic example of this type of expense is depreciation. Thus, it may well be misleading to consider all expenses as cash outflows.

Because of the timing differences between when expenses are recognized, and when cash is disbursed, a company may experience a "loss" on the income statement yet still have a relatively strong cash position. Conversely, a company may show a "profit" on the income statement yet be in a precarious cash position because of the difference in timing between the recognition of the sale and the receipt of cash. The acquisition manager must be alert to these distinctions and the implications they may have for his program.

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TEACHING NOTE

RECOGNITION OF PROFIT/LOSS ON GOVERNMENT CONTRACTS

PURPOSE AND SCOPE

This teaching note explains the difference between two methods for recognizing profit and loss on long-term government contracts.

DISCUSSION

Weapon systems contracts often take more than one year to complete. Two approaches are available to account for revenue and expenses associated with such long-term contracts:

1. *The completed-contract method*

   Under this method, the build-up of contract cost is carried on the Balance Sheet as Work-in-Process Inventory until work is completed on the contract deliverable(s). Work-in-Process Inventory is then transferred to Finished Goods Inventory (still on the Balance Sheet) and, subsequently, to Cost of Goods Sold on the Income Statement, when the customer accepts delivery. Customer acceptance also triggers recognition of a Sale on the Income Statement. Thus, the contractor does not recognize any profit on the contract until it is completed. (However, if the contractor anticipates a loss, the total estimated loss must be written off immediately to be in compliance with the fundamental accounting principle of Conservatism.)

   Use of the completed-contract method can result in large swings in the reporting of profit and loss on the annual financial statements. In shipbuilding, for example, it may take many years to complete a single vessel. Use of the completed-contract method of accounting could lead to irregular ups and downs in business unless a ship of similar cost was being delivered every year. To avoid misleading profit reporting, many companies engaged in long-term contracts employ the percentage-of-completion method of accounting described below.

2. *The percentage-of-completion method*

   This method (also known as the production basis) recognizes income on work as a contract progresses and takes profit each year over the life of the contract in accordance with the progress achieved that year. If the work performed in a given year is estimated to represent 10% of the total performance under the contract, then 10% of the total estimated profit is considered earned. If, during the next accounting period, the contract has progressed to 30% completion, an additional 20% of the total estimated profit would be considered earned. This approach to income recognition has the dual advantage of recording income over the life of a contract as costs are incurred and effort expended, and of avoiding irregular fluctuations in results of operations sometimes associated with completed contract accounting. Since estimating contract costs is complex, the participation of financial, engineering, manufacturing, and other technical disciplines is usually necessary to determine the remaining costs that are to be incurred. When the total cost estimate for a contract indicates that a loss will be sustained, that loss should be recorded in full.

Example of Accounting Methods for a Long-term Contract

A prototype piece of equipment is to be constructed to military specifications by a company beginning in year 1 at a contract price of $900,000 with initial estimated costs totaling $750,000. The equipment is expected to be completed in year 3. The costs incurred, cost estimates and other pertinent data are presented below in summary form for each of the three (3) years.

Basic Data	Year 1	Year 2	Year 3
Actual Cost Incurred	$ 125,000	$ 495,000	$ 145,000
Estimated Cost to Complete	625,000	155,000	0

Percentage of Completion Method

Year 1

Actual Cost Incurred	$ 125,000
Estimated Cost to Complete	625,000
Total Estimated Cost	750,000
Gross Profit Earned	
Contract Price $900,000 x $125,000 / 750,000 =	150,000
Less Actual Cost Incurred	(125,000)
Gross Profit Year 1	$ 25,000

Year 2

Actual Cost Incurred ($125,000 + 495,000)	$ 620,000
Estimate Cost to Complete	155,000
Total Estimated Cost	$ 775,000
Gross Profit Earned:	
Contract Price $900,000 x $620,000 / 775,000 =	$ 720,000
Less Actual Cost Incurred	(620,000)
Gross Profit Earned	100,000
Less Profit Recognized Year 1	(25,000)
Gross Profit Year 2	$ 75,000

Year 3

Contract Price	$ 900,000
Less Actual Cost Incurred ($620,000 + 145,000)	$ 765,000
Actual Gross Profit	135,000
Less Gross Profit Recognized Years 1 + 2	(100,000)
Gross Profit Year 3	$ 35,000

Completed Contract Method

NOTE:

Under this method, cost incurred are shown as work-in-process inventory in the Balance Sheet until the item is delivered to the customer. All costs and revenue are then shown on the income statement for the year of delivery. Total Gross Profit is the same under both methods.

Year 3

Contract Price	$ 900,000
Less Actual Cost Incurred ($620,000 + 145,000)	$ 765,000
Actual Gross Profit	135,000
Less Gross Profit Recognized Years 1 + 2	0
Gross Profit Year 3	$ 135,000

DEFENSE SYSTEMS MANAGEMENT COLLEGE

CONTRACTOR FINANCE FOR ACQUISITION MANAGERS

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TEACHING NOTE

CASH FLOW STATEMENT

PURPOSE AND SCOPE

This teaching note explains the purpose of cash flow analysis and differentiates between sources and uses of cash.

DISCUSSION

The goal of financial statement analysis is to develop the best possible evaluation of the financial condition and performance of the firm. The process is one of judgment, requiring careful analysis of all relevant past, present, and future financial information. Our coverage of the major concepts underlying preparation of the balance sheet and the income statement in previous teaching notes should have given you a feel for what they do and do not tell you.

- The Income Statement satisfies the requirement for past information; however, it includes only a number of selected transactions resulting from the employment of productive resources. It does not explain how production took place or how it was financed. (*See the next page for an example of the Income Statement for XYZ Corporation.*)

- The Balance Sheet concerns itself with the present. But because the Balance Sheet is a stopping point in the continuous flow process, it does not reflect movement of cash. (*See the next page for an example of the Balance Sheet for XYZ Corporation.*)

<u>The Statement of Cash Flows</u>

The Statement of Cash Flows answers the question: "Where did the cash come from and where did it go?"

XYZ CORPORATION
INCOME STATEMENT
FOR THE YEAR ENDING DECEMBER 31, 19X2 (000 OMITTED)

Sales		$ 56,784
Less: Cost of Goods Sold	$ 50,610	
Gross Profit		6,174
Less: G&A Expenses	4,172	
Depreciation Expense	376	
Earnings Before Interest Expense		1,626
Less: Interest Expense	480	
Earnings Before Taxes		1,146
Less: Taxes	527	
Net Income		$ 619

XYZ CORPORATION
BALANCE SHEET
AS OF DECEMBER 31, 19X2
(000 OMITTED)

ASSETS	**19X2**	**19X1**	**EQUITIES**	**19X2**	**19X1**
Current Assets			Current Liabilities		
Cash & Marketable Sec	250	200	Accounts Payable	2,222	2,400
Accounts Receivable	817	400	Accrued Expenses	1,475	1,400
Inventories	12,271	12,000	Accrued Taxes	292	260
			Notes Payable	2,680	2,000
	13,338	12,600		6,669	6,060
Fixed Assets			Long Term Debt	4,266	4,000
Plant and Equipment	10,866	10,000			
Less Accum	(5,376)	(5,000)	Stockholder Equity		
Depreciation			Preferred Stock	1,000	1,000
			Common Stock	4,748	4,723
	100	183	Retained Earnings*	2,245	2,000
Other Assets					
TOTAL ASSETS	18,928	17,783	**TOTAL EQUITIES**	18,928	17,783

***NOTE:** Accountants record dividend payments as a reduction of retained earnings. Retained earnings increased by $619,000 in net income during 19X2 and decreased by $97,500 and $276,500 due to preferred and common stock dividend payments. The net change in retained earnings was $245,000.

Accountants analyze the impact on cash flow of all changes that occurred in asset and equity accounts as shown on the Balance Sheet from one accounting period to the next. The many inflows and outflows of cash are then classified according to operating, investing, and financing activities of the company. (*See the next page for an example of the Statement of Cash Flows for XYZ Corporation.*)

- The Operating Activities section of the Statement of Cash Flows shows the results of current operations as reported on the Income Statement with adjustments made to reconcile the reported profit or loss to net cash provided by operations.

- The Investment Activities section provides insight into the future by highlighting the sector of the business to which cash was applied.

- The Financing Activity section tells us where the cash came from to finance the items listed.

A comparison of the cash flows over a period of time will indicate the direction in which the firm is heading in so far as resource allocation is concerned, and whether or not that direction is in step with the stated goals of management. Careful analysis of the Statement of Cash Flows will provide information that answers such questions as:

1. What use was made of cash provided by operations?
2. What was the source of cash invested in new plant and equipment?
3. What use was made of cash obtained from a new bond issue or the sale of common stock?
4. How was it possible to continue payment of the regular dividend in the face of an operating loss?
5. How was the retirement of long-term debt financed?
6. Why, in spite of record profits, is the cash position lower than last year?
7. To what use were the proceeds received from the sale of plant and equipment applied?

In addition to providing information on changes in liquid resources and their effect on a company's ability to meet current obligations, the Statement of Cash Flows also provides clues to such important matters as:

1. The feasibility of financing capital expenditures and possible sources of such financing.
2. Sources of cash to finance a future expansion in the volume of business.
3. Future dividend policies.
4. The ability to meet future interest expenses on long term debt.

XYZ CORPORATION
STATEMENT OF CASH FLOWS
FOR THE YEAR ENDING DECEMBER 31, 19X2

Operating Activities:	
Net Income	$619,000
Adjustments to Reconcile Net Income to	
Net Cash provided by Operations:	
Depreciation	$376,000
Increase in accrued expenses	75,000
Increase in taxes payable	32,000
Increase in accounts receivable	(417,000)
Increase in inventories	(271,000)
Decrease in accounts payable	(178,000)
Net Cash Provided by Operating Activities	$ 236,000
Investing Activities:	
Additions to Plant & Equipment	($866,000)
Disposal of Non-Current Assets	83,000
Net Cash Used in Investing Activities	(783,000)
Financing Activities:	
Increase in short-term borrowing	$680,000
Increase in long-term debt	266,000
Sale of common stock	25,000
Dividends on Preferred Stock	(97,500)
Dividends on Common Stock	(276,500)
Net Cash Provided by Financing Activities	597,000
Increase in cash during year	50,000
Cash at beginning of year	200,000
Cash at end of year	$250,000

LESSON ASSIGNMENT SHEET

NOV 99

CONTRACTOR FINANCE FOR ACQUISITION MANAGERS

CFAM 622 - FINANCIAL ANALYSIS OF DoD CONTRACTORS

Objective: For students to understand:

- How financial analysis is used as a basis for evaluating the results of business operations.

Desired Learning Outcomes: The student should be able to:

- Explain the role of financial capability analysis in the DoD acquisition process.
- Identify various sources of financial data.
- Explain how ratios are used to assess activity, liquidity, leverage, and profitability.
- Explain the interrelationships among profit margin, return on investment, and return on equity.

Assignment:

STUDY: Teaching Note: "Financial Capability Analysis of DoD Contractors".

SCAN: Teaching Notes: "Sources of Financial Data" and “Working Capital Management”.

ESPT: 2 hours.

DEFENSE SYSTEMS MANAGEMENT COLLEGE

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TEACHING NOTE

FINANCIAL ANALYSIS OF DoD CONTRACTORS

FINANCIAL ANALYSIS:

Financial statement analysis is a judgmental process. Its goal is to develop the best possible evaluation of the financial condition and performance of the firm. The process requires careful analysis of all relevant financial information concerning the past, the present, and the future. We have discussed the major concepts underlying preparation of the financial statements previously in this reading. By now, you should have some feel for what they tell you and what they do not tell you.

The Income Statement satisfies the requirement for "past" information; however, it includes only a number of selected transactions resulting from the employment of productive resources. It does not explain how production took place nor how it was financed. The Balance Sheet concerned itself with the "present". However, the Balance Sheet, being a stopping point in the continuous flow process, does not reflect movement of cash. The Statement of Cash Flows answers the question - "Where did the cash come from and where did it go?". But what do we do with this information and is there a government need for it all?

OMB Circular A-109 (Major Systems Acquisition), paragraph 13c, states that:

> "Selection of a system and contractor for full scale development and production should be made on the basis of such factors as contractor demonstrated management, financial, and technical capabilities to meet program objectives."

Financial capability analysis, then, is a requirement in the major systems acquisition process. In fact, such analysis is required on all contracts, since the government must award to responsive and responsible contractors. One of the elements necessary to determine the responsibility of a prospective contractor is an examination of the contractor's financial resources (FAR 9.104-1 (a)). The government contract administration function is also charged to "monitor the contractor's financial condition and advise the contracting officer when it jeopardizes contract performance (FAR 42.302 (a)(16)).

The Objective of Financial Capability Analysis

The principal question to be answered through an analysis of a contractor's or potential contractor's financial health is:

> "Will the firm have sufficient financial resources to successfully complete contract performance requirements during the life of the contract?"

In order to address this question properly, you must look beyond historical financial data. If the report is to be of real use to the contracting officer, it must be forward-looking. Discovery of potential cash flow problems is very important and may require extensive cash flow forecasting based on the firm's current business base and the addition of the contemplated contract work effort. While firms can provide a letter from their principal bank stating that a financing relationship is in existence and will be available for the life of the contract, such a letter may be meaningless if the firm gets into serious financial trouble because the bank may withdraw at any time from the relationship.

An Approach to Financial Analysis

To be successful, a financial analysis must be tailored to the specific contractor and the specific purpose of the analysis. None the less, each financial analysis should follow certain steps. Our discussion of financial analysis will cover three steps: sources of data, tools for analysis, and the analysis approach. The first-and probably the most time-consuming-step is gathering historical and forecast data.

Sources of Data:

There are extensive sources of published historical data. The company's annual report and the SEC's 10K provide the foundation. Extensive financial data are also published in such sources as Moody's, Standard and Poor's Register of Corporations, and Value Line, among others. A detailed listing of sources is provided later. This information is only the beginning, however, since a thorough financial analysis requires data not only of the company, but of the industry in which is resides. The Standard and Poor's Industry Surveys and the Robert Morse Associates Annual Statement Studies are among the most useful sources for this information. Historical data may be hard to obtain for the individual operating components within the publicly held corporations but this is not considered a severe problem since we are generally interested in the total corporate financial status. For privately held companies, historical data may be more difficult to obtain. In these situations, working through the cognizant contract administration office can normally produce sufficient baseline and historical information.

The real challenge in the data gathering mode is to obtain forecast data for the development of "pro forma statements" and to understand the assumptions on which the forecasts were made. "Pro forma statements" are estimates or forecasts of what the future statement will look like. While a great number of sources are available for historical financial data, obtaining good forecast data may be difficult.

The best source for forecast data is the contractor; however, it is important that this information be evaluated based on prior history to make a judgment whether the forecast is achievable. Of particular importance are the company's projections for sales, capital expenditures, and line of credit limits. In some cases it may be possible to obtain working capital projections and even complete pro forma financial statements; however, these are typically not available and must be developed. If the analysis is to be a part of a pre-award survey, the request for data should be part of the RFP.

Another source of data is other Government agencies dealing with the contractor. The cognizant contract administration office will have detailed information as a result of its participation in negotiation of forward pricing rates and IR&D/B&P ceilings. Other agencies can provide insight on a contractor's performance on existing contracts and his operations. The contracting officers or acquisition managers of other programs on which the contractor is currently working are another potential source. This sharing of information between contracting offices can be very valuable in providing insight into information not available elsewhere.

Tools and Techniques for Analysis

It is important to collect the data in a way that enables you to make meaningful comparisons and projections. The typical tools and techniques for financial analysis include development of a pro forma statement (a projected or forecasted financial statement for the coming year or years), ratio analysis, and trend analysis projections.

It is the forecasted financial position that is important and not the historical financial data, so development of a pro forma statement is crucial to the success of a financial capability analysis. The most important single data element for information statement development is the sales forecast which may be obtained from the contractor. Given a sales forecast, it is possible to develop a set of pro forma statements for each year under consideration. This is done by assuming that the management of the company, in terms of working capital management, fixed asset management, and financing management, will not change from the historical approach and effectiveness.

Ratio analysis is used to extract key elements from the financial statements and out them in a perspective that is more easily understood. Ratios are probably the best known and widely used tools of financial analysis; yet, the basic idea of the ratio is often misunderstood. A ratio simply expresses the mathematical relationship between one quantity (or item) and another. The ratio of

20 to 10 is expressed as 2:1 or 2. The difficulty in ratios is the relationship between the quantities must be meaningful. There must be a clear, direct and understandable relationship between the selected items. For example, we could understand a relationship between the costs of making an item and the sale price of the item; but not understand the costs of making an item compared to the number of factory employees. Traditional financial ratios have developed into four logical groupings. These groupings center around analyzing the activity of the firm, its liquidity, the financial structure (called leverage) and its measures of profitability. A number of individual ratios are utilized in each of these categories. Ratios are more fully discussed in an attachment. It is very important to remember that the value of ratio analysis derives from comparisons with the same ratio for the company over several years or with other companies in the same industry. Comparison of the ratio with an absolute norm usually is of little value. You must look at changes in the company compared to either themselves or their companies in a similar industry. Trend analysis is an invaluable tool in analysis of ratios.

Financial Analysis: Step-by-Step Approach:

STEP 1: Gather historic and forecast data using the sources described above.

STEP 2: Analyze the historical data using such tools as ratio analysis and trend analysis. With the objective in mind of looking at the financial capability over the life of the contract, it is clear that the historical analysis needs to be accomplished in a manner that facilitates better development of a forecast. This requires more than just an examination of the numbers in the financial statements. Discussions with the company financial and management officials are absolutely necessary since it is necessary to develop an understanding of the management actions that have resulted in this historical condition. One potential method for this review would be to breakdown the data and analyze the following five areas:

- sales analysis
- income analysis
- asset management (activity) analysis
- debt (or leverage) analysis
- liquidity analysis.

STEP 3: Develop a forecast. While many analyses stop with the historical aspect, development of a forecast is critical to providing useful information to the government contracting officer. A recommended approach is to develop a baseline forecast which does not include the impact of the Government decision being considered. An example would be to develop a baseline forecast without the contract award being considered during a pre-award survey as a part of the contractor's financial position. It is important that in the development of this base you clearly define the assumptions and the items that are included in the forecast. This becomes the baseline for analysis of change caused by the government action under consideration. The forecast should incorporate any foreseeable changes to company managerial concepts or styles.

STEP 4: The final step is analysis of the baseline along with expected changes to determine financial viability of the company Once a thorough new forecast has been developed (in the form of pro forma statements), the analysis of the results is readily accomplished. A framework for this would be to breakdown the analysis into the following areas: 1) liquidity analysis, 2) activity or asset management analysis, 3) leverage or debt analysis, and 4) profitability analysis. Analysis of these areas is completed by comparing select data in the form of ratios. Liquidity ratios are indicators of the firm's ability to meet current obligations in times of stress. Leverage ratios focus on the methods and sources of financing utilized to acquire corporate assets and the impact of these methods on the earnings available to common stockholders. They disclose the extent to which non-equity capital is used in a firm and examine the long run ability of a firm to meet payments to non-equity suppliers of capital. Activity ratios deal primarily with the utilization of assets entrusted to corporate management. They describe the efficiency of asset utilization and are particularly useful in tracking the performance of operating managers in charge of specific functions such as inventory management and credit policy. Profitability ratios focus on the amount of profit compared to the amount of revenue or investment. They emphasize the ability to generate revenue in excess of expense. As previously noted, a detailed discussion of ratios is attached.

CONCLUSIONS ON FINANCIAL ANALYSIS

Perhaps the most important aspect of financial capability analysis is understanding that the outcome of all this number crunching will not be a definitive black and white answer as to the financial capability of the firm. A number of subjective judgments must be made in selecting the financial data used in the forecast and the final analysis of these forecasts will include a number of subjective options. The number crunching does, however, provide important insight into the motivations and constraints on the contractor and valuable information on the impact of the Government actions being considered. This should improve the Government's position in managing the contractor's efforts and, through understanding of mutual problems, provide a better working relationship with the contractor which, in turn, increases the chance of success.

Attachment 1: Sources of Financial Data

Before a financial analysis of a contractor can be performed, financial and operating information about the company has to be collected. This section catalogues the information sources available.

PUBLIC DOCUMENTS

Publicly owned corporations are required to file financial reports periodically with the Securities and Exchange Commission (SEC). The SEC reports include:

- Form 10-K annual report
- Form 10-Q quarterly reports
- Form 8-K special reports

The 10-K report is the most comprehensive source of information about a company's financial condition and operations. It provides the following information:

- company background
- historical financial statistics
- CPA audit report
- lists of programs
- data on lines of business and customers
- data on facilities and labor resources
- description of the organizational structure
- review of operations and recent changes
- discussion of pending legal disputes

The 10-K report is usually available 3 or 4 months after the end of the company's fiscal year. For most companies, whose fiscal year corresponds to the calendar year, the 10-K reports are available in March or April. A late report frequently indicates a financial problem. The analyst should obtain at least the last two 10-K reports.

The latest 10-Q report should also be obtained to update key information for the current year and to identify recent events. Of special importance are year-to date sales, costs, and income, as well as current balance sheet data.

The 8-K reports if any provide corrections to earlier 10-K and 10-Q reports and/or new information which may materially affect the company.

All of these reports can be obtained directly from the companies or through the SEC via Internet at http://www.sec.gov/edgarhp.htm.

FINANCIAL PUBLICATIONS

The list of publications in this section is provided for the user's aid in selecting useful sources. No endorsement of these publications is implied.

VALUE LINE: *Value Line* is an investment advisory publication issued in three parts. Part 3, 'Ratings and Reports", offers a one-page summary of a company's financial situation. Financial data include historical sales, depreciation, net income, working capital, long-term debt, and net worth. Other useful data included in the *Value Line* report are description of the company's business, sales by product line, importance of government sales, and the address of the corporate offices. An evaluation of the company's near-term outlook is also provided. Projections of financial data are made for the current year, the next year, and 3 to 5 future years.

An important feature of *Value Line* in terms of Analysis is its ratings of a company from the financial community perspective. Four overall ratings are given in each report: company's financial strength, stocks price stability, stock price growth persistence, and earnings predictability. These four ratings can be compared among 1630 companies in 90 industry classifications and also provides a brief discussion of the near-term outlook for each industry. *Value Line* is published by Value Line Publishing, Inc., 220 E. 42nd Street, New York, NY 10017 and is available in many public libraries.

Standard and Poor's Corporation: Standard and Poor's Corporation issues *Stock Reports* on companies traded on the New York and American Stock Exchanges. It is a subscription advisory service and many public libraries regularly obtain it. Typical information in a stock report includes sales data, new corporate developments, sales and earnings prospects for the next year, backlog, long-term prospects, and historical income and balance sheet date. Another publication of Standard and Poor's is Industry Surveys. These surveys provide a detailed examination of economic trends and outlook for a number of industries. These surveys are a basic source of market information. Individual industry surveys (e.g., aerospace) are published once a year, with periodic updates contained in a "current analysis" of that industry. Topics covered for the aerospace industry include industry backlog, industry sales by customer, major military programs by contractor (including total estimated cost of a program and the current and 1-year projected fiscal year defense funding), foreign military sales prospects, major subcontractors in the aerospace industry and their outlook, certain financial ratios of different aerospace companies, and a comparative company analysis for such measures as capital expenditures as a percent of gross plant, sales, profit margins, and net income as a percent of sales. Both Standard and Poor's publications, *Stock Report* and *Industry Surveys* are available at many public libraries, or can be ordered from Standard and Poor's Corporation, 25 Broadway, New York, NY 10004.

Moody's Investment Service: *Moody's Industrial Manual* is an annual publication of the Moody's Investment Service, Inc., 99 Church Street, New York, NY 10007. It contains information on publicly held corporations in the United States, including summaries of company background and financial statistics. Moody's *Bond Record* is another publication that rates the safety of a company's bonded debt, using a nine-point rating scale. The highest rating is AAA and C is the lowest. The rating reflects Moody's opinion of the security of the bond's principal and interest based upon the type of bond and the company's present and expected financial position. If a company had low-rated bonds, it will have difficulty in placing new debt. Thus, the Moody's bond rating can be used to determine the financial community's view of new financing for a company.

Robert Morris Associates: Robert Morris Associates publishes *Annual Statement Studies* which is another source of data for comparative ratio analysis. Composite ratios are included by industry and by asset size of the firm within each industry. Asset size ranges from under $250,000 to $10 million - $50 million. Consequently, this source is useful when analyzing smaller companies. This document can be obtained from: Robert Morris Associates, One Liberty Place, 1650 Market Street, Suite 2300, Philadelphia, PA 19103-1398.

Dun & Bradstreet, Inc. Dun and Bradstreet publish *Key Business Ratios* in addition to providing financial data on a wide variety of companies in several formats. Their report may be the only source for data on many smaller and privately owned companies. They have offices in many major cities. Dun and Bradstreet information is often maintained by Small Business specialists. The address of their Business Economics Division is 99 Church Street, New York, NY 10007.

Other periodicals such as *The Wall Street Journal, Forbes, Business Week*, etc., publish important comparative business statistics on a routine basis, in addition to stories about individual companies or industry segments. These periodicals will be important tools for the person trying to understand what is happening within an industry.

Various computer data base services also exist that give historical and ratio information. Compustat and Lotus both have such services available using either CD-ROM technology or modem connect to a central server. These services would be invaluable to a financial analysis since historical information and ratios are available for extended periods. Data can be downloaded to various computer spreadsheet programs, thus saving the analyst considerable data entry effort.

Attachment 2: FINANCIAL RATIOS

The ratios which are most widely accepted within the financial analyst community can be classified into five main categories:

1. Liquidity ratios
2. Leverage ratios
3. Activity ratios
4. Profitability ratios
5. Composite ratios.

These categories of ratios will be discussed in the following paragraphs. The information chosen to form the ratios will come from either the Balance Sheet or Income Statement (details of which has been discussed).

LIQUIDITY RATIOS: Liquidity is the ability of a company to meet its short term debt. Liquidity is essential to conducting business activity. Liquidity ratios are static in nature since they are based on the balance sheet report at year end. Short-term creditors would be particularly interested in these ratios since they would reflect the current ability to pay back debt.

1. The *Current Ratio* is the oldest and best known of financial ratios. It is expressed as:

$$\frac{\text{Cash \& Marketable Securities + Accounts Receivable + Inventories}}{\text{Current Liabilities}}$$

The ratio is used to measure the company's ability to meet its current liability obligations out of current assets. A widely employed bankers rule of thumb is that the current ratio should be at least 2.

2. Another liquidity ratio is the *Quick Ratio or Acid Test* and is expressed as:

$$\frac{\text{Cash \& Marketable Securities + Accounts Receivable}}{\text{Current Liabilities}}$$

This is a more stringent test of liquidity. Inventory is not included because of the length of time to convert it to cash.

3. Lastly, *Net Working Capital* is a measurement of liquidity. This is described as:

$$\text{Net Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

Net working capital gives a safety zone to creditors --- a large net working capital may be necessary if the company has had problems in past short term borrowing.

ACTIVITY RATIOS: With activity ratios, you attempt to look at how productively the assets of the corporation are being used. Assets are used to generate sales, profit, and cash so with the activity ratios analysts attempt to get a feel for the speed of cash flow in the corporation.

1. The *Inventory Turnover Ratio* measures the rate of speed with which inventories move through and out of the firm. The ratio is derived as:

$$\text{Inventory Turnover} = \frac{\text{Cost of Goods Sold}}{\text{Inventory}}$$

Several interpretations of the inventory turnover ratio are possible. For example, slower than normal inventory turnover could be due to slow moving items which are obsolete or in weak demand (a bad management condition) - or - a build up in inventory to meet future contractual commitments or in anticipation of price hikes for raw materials, strikes, or shortages (a good management decision).

The inventory turnover ratio is used to compute the *Average Age of Inventory* within a company. This is computed by:

$$\text{Average age of inventory} = \frac{365}{\text{Inventory Turnover}}$$

2. The *Average Collection Period* measures the number of days it takes, on the average, to collect accounts receivable. The ratio is determined by:

$$\text{Average Collection Period} = \frac{\text{Ending Accounts Receivable}}{\text{Sales}/365}$$

In order to evaluate the significance of the Average Collection Period, you compare it to the industry average and to the company's credit terms to determine the degree to which customers are paying on time. Possible findings include: claims against the government which are in dispute; poor collection effort by the firm; customers in financial difficulty; or customers using accounts payable to the firm as an interest free source of finds for their own operations. (This is typical when credit gets tight and interest rates are high.)

3. The *Operating Cycle* of a business is the number of days it takes to convert inventory and receivables into cash. The cycle is computed as:

Operating cycle = average collection period + average age of inventory

4. The *Average Payment Period* measures the number of days it takes, on the average, to pay accounts payable. The ratio is:

$$\text{Average Payment Period} = \frac{\text{Ending Accounts Payable}}{\text{Purchases}/365}$$

In order to evaluate the significance of the Average Payment Period, compare it to the industry norm and to credit terms of suppliers to determine whether or not accounts payable are overdue. Possible findings include: it is management policy to pay late or there are cash flow problems.

5. *Total Asset Turnover* is a very descriptive activity ratio. This ratio evaluates a company's use of its asset base to generate revenue. The ratio is computed as:

$$\frac{\text{Sales}}{\text{Total Assets}}$$

A low turnover ratio may be due to many factors, but the ratio highlights the need to identify the underlying reasons.

LEVERAGE RATIOS: Leverage is the use of other people's money to generate a greater return on investment to the owners of the firm. Leverage or financial structure ratios are useful in analyzing the long term solvency of the firm. Because of the long time-horizon involved, there is less emphasis on specific projections of cash flow and more emphasis on the reasonableness and safety of the long term debt invested in the firm. These ratios are all measures of risk inherent in the financial structure:

1. The *Debt Ratio* shows the percentage of total funds obtained from creditors. The ratio is expressed as:

$$\text{Total Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

Creditors would like to see a low debt ratio because it would indicate a greater cushion for creditors if the company goes bankrupt.

2. *Financial Leverage Ratio* also looks at the structure of where the company obtained its funds from --- creditors (debt) or shareholders (capital marketplace). The ratio is expressed:

$$\text{Financial Leverage} = \frac{\text{Total Liabilities \& Equities}}{\text{Shareholder's Equity}}$$

3. Typically, the higher the proportion of debt, the larger the fixed charges for interest and debt repayment, and the greater the likelihood of insolvency during protracted periods of earnings decline. A weakness of leverage ratios is that they do not focus on the availability of funds to pay the interest of debt as it becomes due. In fact, as debt is repaid, the financial structure ratios will improve while the amount of cash required to pay interest and principal remains constant. Earnings coverage ratios, a subcategory of leverage ratios, overcome this weakness and measure the relationship between debt-related fixed expenses and the earnings available to meet those expenses. The most common earnings coverage ratio is called *Times Interest Earned* and is expressed as:

$$\text{Times Interest Earned} = \frac{\text{Earnings Before Interest and Taxes}}{\text{Interest}}$$

The greater the coverage of interest the better, because the long term lender and the owners are more interested in the ability of the firm to stay out of trouble than in what they will get in the case of bankruptcy.

PROFITABILITY RATIOS: Profitability is possibly the most important measure of performance -- performance being the source of rewards required to compensate owners for risk. The basic concept of profitability ratios is to measure income against revenue or against the investment required to produce it. There are three principal profitability ratios with which you should be familiar in financial analysis. They are:

1. *Profit Margin* shows what percentage of dollars are left after the company has paid for the costs of building goods. It is expressed as:

$$\text{Profit Margin} = \frac{\text{Net Income}}{\text{Sales}}$$

2. *Return on Total Assets* looks at the efficiency with which management has used its resources, the company's assets, to generate income. Sometimes this ratio is called *Return on Investment (ROI)*. It is compute as:

$$\text{ROI} = \frac{\text{Net Income}}{\text{Total Assets}}$$

As noted, ROI addresses how well management utilizes the assets of the firm in generating income. The ROI formula reflects the combined result of profit margin (see above) and the efficiency in employing assets as shown in the total asset turnover ratio (see activity ratios). Thus the ROI formula can be broken into two components as follows:

$$\text{ROI} = \frac{\text{Net Income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total Assets}}$$

ROI is a powerful indicator of the effectiveness of a firm's operations. It is normally used to evaluate operating managers such as division managers and acquisition managers.

3. *Return on Stockholder or Shareholder Equity* measures the rate of return on the stockholders' or shareholders' investment, their equity in the company. This is also known as Return on Equity (ROE).

$$\text{ROE} = \frac{\text{Net Income}}{\text{Stockholders' or Shareholders' Equity}}$$

ROE can be broken into two components: these being return on investment (see above) and financial leverage (see leverage ratios). The relationship is shown by:

$$\text{ROE} = \frac{\text{Net Income}}{\text{Total Assets}} \times \frac{\text{Total Assets}}{\text{Stockholders' or Shareholder's Equity}}$$

You should recognize that borrowing (represented in financial leverage) amplifies the profit results shown in ROI to give a ratio which expresses the total financial results of the company or ROE.

These profitability ratios give three different viewpoint --- how much profit is being made on each sale, how much is made for the assets that are employed, and how much for the investment of the company owners.

COMPOSITE RATIOS: There have been numerous studies over time that have built composite or multi-ratio formulas in performing financial analysis. Most studies have been aimed at predicting the financial health or financial distress (bankruptcy) of the firm. Edward I. Altman originated work in 1968 using a statistical technique called multi-variate discriminant analysis. This technique classifies observations into distinct groupings -- bankruptcy or financial health -- and allowed Altman to integrate several ratios into one equation used to predict financial health. Altman's work is considered a cornerstone in this area. The *Altman Z-Score model* is as follows:

$$Z = 1.2(WC/TA) + 1.4(RE/TA) + 3.3(EBIT/TA) + 0.6(MVE/TL) + 1.0(S/TA)$$

If Z-Score is less than 1.81, classify as bankrupt.
If Z-Score is between 1.81 and 2.99, exercise caution.
If Z-Score is over 2.99, classify as healthy.

WC = working capital
TA = total assets
RE = retained earnings
EBIT = earnings before interest & taxes
MVE = market value of common equity
TL = total liabilities
S = sales
Z = Z-Score

Although the Altman model is still in use, the Navy established a DoD-unique model based on data and analysis of 58 large publicly held firms with significant defense sales. The principle advantage of the Navy Z-Score would be its reliance on only DoD contractor data. The *Navy Z-Score model* is as follows:

$$Z = 1.5 + 4.6(CF/TD) - 0.4(CA/CL) + 9.3(QA/TA) - 6.5(TD/TA) - 5.4(WC/TA) + 1.6(NS/TA)$$

Negative score indicates firm in financial distress.
Score between 0 and 2.4 indicates zone of uncertainty.
Score over 2.4 indicates financially healthy.
The more positive the score, the better.

CF = cash flow
TD = total debt
CA = current assets
CL = current liabilities
QA = quick assets
TA = total assets
WC = working capital
NS = net sales
Z = Navy Z-Score

There continues to be research in the use of composite ratios for financial health determination. These models should be used with the same caveats of other ratios. No model is absolute as a predictor; however, trend analysis based on the composite is helpful in evaluating the rising or falling condition of the firm.

This has been meant strictly as a short introduction to the area of financial ratios. Those interested in this area or completing a financial analysis should consult their library for more authoritative textual material.

Attachment 3: ADDITIONAL RELATED DISCUSSIONS

INFLUENCES ON CASH FLOW

The basic business equation requires a balance between risk and return to the business. The greater the risk, the greater the return required. In examining this business equation, we must also examine cash flow as one of the principal ingredients of risk. This has been recognized in various reviews of government/contractor business policies. Government policy must be reviewed in total and look at the three areas of profit, investment, and financing. This discussion will primarily look at the financing policy and various effects of contractor cash flow.

A Financial Executives Institute (FEI) paper entitled "The Impact of Government Policies on Defense Contractors", published in July 1987, broke down the various factors which impact contractor cash flow into three type: externally controlled, contractor controlled, and customer (the buying customer of DoD) controlled. Cash flow can be and is influenced by these three factors.

Externally controlled factors include the following: appropriation and authorization levels, tax legislation, interest rates, borrowing capacity, and general economic conditions, among other. Important changes have happened in some of these factors. The Tax Reform Act of 1986 eliminated investment tax credits for new capital equipment investment. Tax credits had given contractors a reward for capital investment in the form of lower taxes and thus improved cash flow. This 1986 legislation also reduced the benefit of the completed contract accounting which had allowed the deferral of taxes until contract completion. Once again, this tax law change had a large effect on cash flow since taxes were now payable during contract performance rather than being delayed. The cumulative effect of these changes was strongly reflected in cash flow. One offset to the negative cash flow change was the reduction in statutory tax rate from 46% to 34%.

The second factor area was contractor controlled. Certainly contractor performance has a great effect on cash flow. The contractor performing on target in the areas of cost, schedule, and technical will be generating the cash anticipated when the contract was negotiated. Additionally, the various corporate strategic decisions on capital expenditure (new plant and equipment) levels, research and development expenditure levels, inventory management, and cash management will strongly effect the need for cash or how much cash can be generated by the contractor. Basically, any contractor policy that effects time, funds, people, facilities, or equipment will have an effect on cash flow.

The last factor area was considered to be customer controlled. In the FEI study, the customer was considered to be DoD. There also have been some significant changes in the customer policy which the study critiqued. Government policies discussed included:

A. Profit policy which was revised after the Defense Financial and Investment Review of 1985 to lower profit an average of one percent.

B. Progress payment rates which at the time of the study had been lowered from 90% to 75%. Currently the progress payment rate is indexed to borrowing rates and is annually reviewed.

C. Contractors were asked by some DoD agencies to share in development costs through the use of fixed-price-development contracts although official DoD policy did not advocate this arrangement. Under Congressional legislation this policy was changed and thus fixed-price-development contracts are discouraged.

D. Contractors were required to fund an increasing share of research and development funds because Congressionally established ceilings on independent research and development (IR&D) costs had not increased in many years. The IR&D ceiling was completely eliminated beginning in FY 1996. This legislation has also broadened the definition of allowable IR&D.

E. Contractors were required to fund not more than fifty percent of special tooling and test equipment costs which significantly increased their "up-front" investment costs.

F. Other areas of customer policy included elimination of milestone payments, dual sourcing decisions, payment timing, withholding of payments, and allowability of cost issues.

The educational value of the FEI study is not to debate the changes that have occurred, but to understand that cash flow may be and is impacted by many areas. We must understand the impact of policy change and be able to evaluate the effect of the changes. The basic business equation must keep risk and return in balance. If risk is increased by changing investment or cash flow influences then the return should be modified to keep the equation in balance.

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NOV 99

TEACHING NOTE

WORKING CAPITAL MANAGEMENT

PURPOSE AND SCOPE

This teaching note will acquaint you with the concept of working capital management.

DISCUSSION

Working capital is generally defined as an organization's current assets. An organization's investment in working capital is equal, therefore, to the total of all current asset account balances at a given time. Accordingly, working capital is not constant, but varies depending on the organization's level of investment at any given time. Net working capital is defined as current assets less current liabilities. The dollar amount of net working capital also varies since the current asset and the current liability account balances are constantly changing as assets are turned over in the revenue generation process and as liabilities are incurred and paid. The net working capital figure on any given day indicates that portion of the firm's investment in current assets which is being financed by sources other than current liabilities, e.g., long term debt or stockholder's equity.

Some of the current asset and current liability account balances (such as accounts receivable and accounts payable) tend to move in the same direction as sales. The relationship between these account balances and the level of sales can be affected by management decision. Identifying and maintaining the optimum level for these accounts relative to sales is one of the principal goals of working capital management.

The individuals in the organization charged with working capital management must make a tradeoff between two key factors impacting the overall financial condition of the firm—liquidity and profitability.

When a firm opts for liquidity over profitability, it is said to be pursuing a conservative working capital management policy—since a high degree of liquidity is inherently a risk-averse posture. When a firm opts for profitability over liquidity, it is said to be pursuing an aggressive working

capital management policy because high profits typically entail commensurate risks. These relationships can be displayed in the form of continuums:

Working Capital Management Policy

Conservative <----------> Aggressive
Liquidity
High <----------> Low
Profitability
Low <----------> High

A firm may choose to operate anywhere along the policy continuum depending upon its attitude toward risk, but the choice requires a tradeoff between liquidity and profitability. The validity of this statement will become clearer as we analyze the options facing management as they face decisions concerning:

- the level of current assets versus the level of sales;
- the level of current liabilities versus the level of total debts;
- the level of current assets versus the level of current liabilities.

Current Assets and Sales

The size of the firm's investment in current assets and its ability to generate sales can be visualized in the form of activity ratio:

$$\frac{\text{Sales}}{\text{Current Assets}} = \text{Current Asset Turnover}$$

The more efficiently the organization uses assets in generating sales (i.e., the lower the denominator in the above ratio), the greater the return on investment:

Profit Margin X Asset Turnover = Return on Investment

$$\frac{NI}{S} \times \frac{S}{TA} = \frac{NI}{TA}$$

$$\frac{CA + FA + OA}{\text{Cash + Marketable Securities + Accounts Receivable + Inventories}}$$

The smaller the investment in any or all of the current asset accounts for a given level of sales, the greater the return on that investment. So minimizing the level of investment in current assets is an appropriate goal in the interests of increased profitability.

The tradeoff between liquidity and profitability is most clearly defined with regard to cash and marketable securities. A large cash balance is the ultimate in liquidity, but cash in and of itself produces no income. Cash must be invested so as to increase revenue producing assets (e.g., inventory) or to reduce expense producing obligations (e.g., interest bearing debt) if net income is to be increased. Temporarily investing "idle" cash in marketable securities will generate some additional revenue while maintaining a high degree of liquidity, but this is a sideline venture for all but a few firms in our economy.

It is much more difficult to make a generalized statement about the tradeoff between profitability and liquidity with regard to accounts receivable and inventory. But, for the sake of simplicity, let's take as a given that an increase in these account balances will result in a brighter liquidity position in terms of the current ratio, and that a reduction will result in an increase in the asset turnover ratio.

Current Liabilities and Total Debt

When management has made its basic policy decisions concerning the level of investment in current assets, it must turn to the issue of financing that investment. Certain current liabilities such as accounts payable and other obligations (e.g., wages, taxes, etc.) which accrue during the normal course of business will provide what is often called "spontaneous" financing. Most current liabilities, in addition to their spontaneity, are also an interest-free form of financing, provided the firm pays its bills as they fall due. An aggressive working capital management policy would call for maximizing the use of current liability financing since total interest costs would be reduced and profitability thereby increased. A conservative policy would call for minimizing the use of current liabilities to ensure strong liquidity ratios.

Given that a firm would not typically finance all current assets with current liabilities, where could it obtain the additional financing required to support net working capital? It is conventional wisdom that the length of the financing obligation in terms of time to maturity should be closely matched with the life of the asset which ultimately generates the funds to liquidate that obligation. Organizations, therefore, often utilize longer-term debt and equity to finance investments in major ventures such as facilities expansion or the establishment of new product lines. Similarly, net working capital is often financed through bank borrowing.

Short-term debt is characteristically less expensive than long-term debt during periods of normal credit availability and interest rate levels. This is a result of the long-term lender's demand for a higher interest rate to compensate for the added risk of the longer timeframe. Maximum use of short-term debt in normal times would be a logical extension of an aggressive working capital

management policy, since overall interest costs are kept to a minimum. However, the shorter the maturity of such financing, the greater the possibility that the firm will be faced with tight money or high interest rates when additional funds are required. Minimizing the use of current liabilities and short-term debt would be consistent with a conservative working capital management policy, since liquidity ratios would be improved and the firm less impacted by changes in short-term credit availability or interest rates. Extensive use of long-term debt could, however, result in an increased level of interest expense with a corresponding reduction in profit.

This latter point bears some emphasis. Assume that, as a matter of policy, an organization relies almost totally on long-term debt to support its net working capital investment. An advantage of that policy is that management doesn't have to spend as much time worrying about liquidity issues. But, what if some or all of the long-term debt falls due when money is tight and interest rates are high? Can the firm obtain sufficient funds to refinance the debt? Will the lender force management to accept onerous terms and conditions in return for extending credit? Will the interest expense become a burden?

An overly conservative working capital management policy (extensive use of long-term debt to finance current asset investment) can be of significant concern to creditors and owners alike. One of the tests of financial strength is the Times Interest Earned Ratio (EBIT divided by I). In a worst-case situation—an erratic Times Interest Earned Ratio brought about by high interest expense coupled with significant fluctuation in revenue—the financial community may well question the financial strength of the organization and subject it to close scrutiny whenever it requires additional financing.

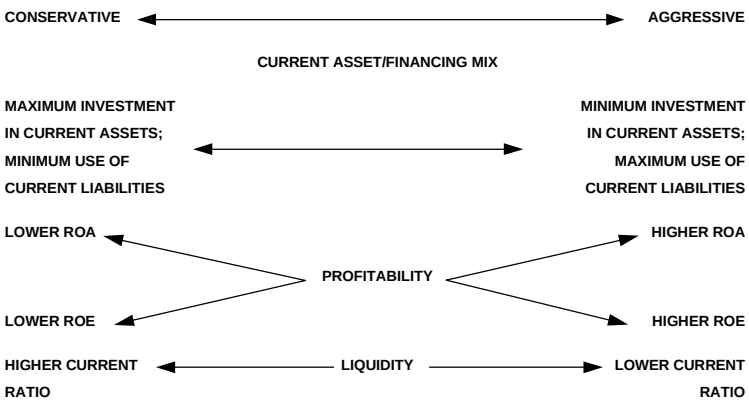
In summary, we can make generalized statements about the tradeoffs between liquidity and profitability.

- A conservative working capital management policy emphasizes maximum investment in current assets and minimum use of current liabilities to finance that investment. This results in a higher current ratio, lower asset turnover, and higher interest expense — which, in turn, results in a lower return on investment and a lower return on equity.

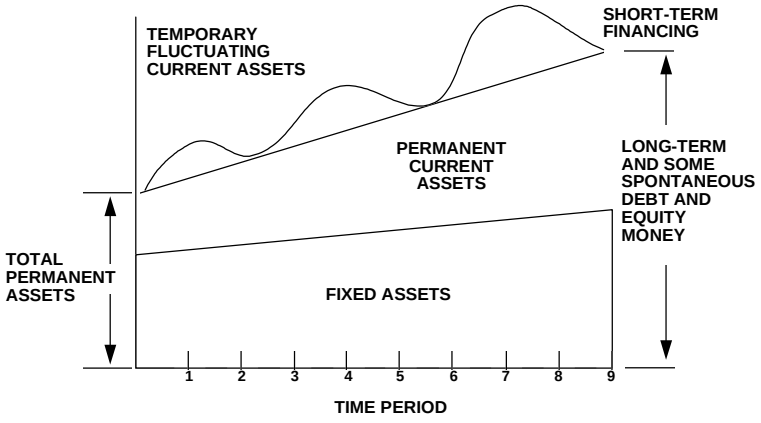
- An aggressive working capital management policy calls for a minimum investment in current assets and maximum use of current liabilities to finance that investment. This results in a lower current ratio, higher asset turnover, and lower interest expense—which, in turn, results in a higher return on investment and a higher return on equity.

These relationships are summarized on the following page.

WORKING CAPITAL MANAGEMENT POLICY



FLUCTUATING VERSUS PERMANENT ASSETS



LESSON ASSIGNMENT SHEET

NOV 99

CONTRACTOR FINANCE FOR ACQUISITION MANAGERS

CFAM 814 - CASE STUDY: FINANCIAL ANALYSIS

Objective: For students to:

- Demonstrate the interrelationship of profitability, efficiency of asset utilization, and other financial ratios.

Desired Learning Outcomes: The student should be able to:

- Understand the relationship of profit margin, turnover, and leverage.
- Understand the availability of information -- sources and types.

Assignment:

Case Study: ABC Aerospace Financial Review. Answer questions in teaching note.

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TEACHING NOTE

ABC AEROSPACE FINANCIAL REVIEW

The time is March of 19X7. Mr. Art Rossi was just appointed Chief Executive Officer for ABC Aerospace. He has examined the company's past history and available information on competing companies. You are Joe Student, Chief Financial Officer.

Mr. Rossi has challenged you to find a way to return the company's ROE to that of the 19X2 timeframe and that of competitors.

You have obtained information from the COMPUSERVE data bank. This information is shown in the following four attachments: 1) five years worth of ratios of ABC Aerospace, 2) ratios for competitors for the last year, 3) income statement data for the last three years, and 4) balance sheet data for the last three years.

Can ABC build its ROE? if, so what are the areas that should be addressed?

ABC AEROSPACE
ABC
SIC: 3812

ANNUAL RATIO REPORT

LIQUIDITY	Jul 19x6	Jul 19x5	Jul 19x4	Jul 19x3	Jul 19x2
Current Ratio	1.99	1.81	1.69	1.54	1.57
Quick Ratio	1.38	1.20	1.15	1.09	1.22
ACTIVITY					
Inventory Turnover	5.27	5.11	5.14	5.34	7.34
Receivables Turnover	5.07	5.31	6.19	6.72	6.92
Total Asset Turnover	0.99	0.97	0.98	0.94	1.02
Average Collection Period (Days)	71.986	68.693	58.953	54.291	52.754
PERFORMANCE					
Sales/Stockholder Equity	3.966	3.962	4.138	4.194	4.880
PROFITABILITY					
Net Profit Margin (%)	3.47	3.55	3.43	3.12	3.78
Return on Assets (%)	3.44	3.39	3.29	2.83	3.86
Return on Equity (%)	13.78	14.09	14.24	13.13	16.78
LEVERAGE					
Times Interest Earned	2.67	2.67	2.69	2.51	13.39
Total Debt/Total Assets (%)	33.94	34.33	33.71	35.08	33.66
Total Assets/Stockholder Equity (Financial Leverage)	4.003	4.154	4.325	4.641	4.352

Attachment 1

COMPARATIVE ANNUAL RATIO REPORT

	ABC Aero	**DEB Comp**	**GHI Comp**	**JKL Comp**	**MNO Comp**	**Industry Average**
	Jul 19x6	Dec 19x6	Sep 19x6	Dec 19x6	Dec 19x6	19x6
LIQUIDITY						
Current Ratio	1.99	1.51	1.24	1.15	1.38	1.38
Quick Ratio	1.38	0.67	0.74	0.38	0.86	0.72
ACTIVITY						
Inventory Turnover	5.27	3.85	5.76	3.29	7.40	6.02
Receivables Turnover	5.07	5.93	5.43	9.38	5.43	6.45
Total Asset Turnover	0.99	1.41	1.33	1.62	1.46	1.34
Average Collection Period (Days)	71.986	61.564	67.271	38.928	67.187	59.94
PERFORMANCE						
Sales/Stockholder Equity	3.966	3.474	2.957	3.256	4.313	3.41
PROFITABILITY						
Net Profit Margin (%)	3.47	3.48	5.04	6.01	3.36	4.50
Return on Assets (%)	3.44	4.72	6.41	9.11	4.88	6.03
Return on Equity (%)	13.78	14.05	14.92	19.58	14.51	16.75
LEVERAGE						
Times Interest Earned	2.67	4.06	8.29	8.32	4.12	6.23
Total Debt/Total Assets (%)	33.94	22.38	13.92	24.05	29.07	21.76
Total Assets/Stockholder Equity	4.003	2.979	2.327	2.150	2.971	2.78

Attachment 2

ABC AEROSPACE
ABC
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ANNUAL INCOME STATEMENT

	Jul 19x6	Jul 19x5	Jul 19x4
Sales	5,156,382	5,022,781	4,863,894
Cost of Goods Sold	4,012,731	3,908,460	3,799,613
Gross Profit	1,143,651	1,114,321	1,064,281
Selling, General, & Administrative Expense	534,264	515,209	507,924
Operating Income Before Depreciation	609,388	599,112	556,358
Depreciation, Depletion, & Amortization	214,854	204,168	189,075
Operating Profit	394,534	394,944	367,283
Interest Expense	191,359	187,986	172,606
Non-Operating Income/Expense	116,618	107,561	97,208
Pre-tax Income	319,795	314,520	291,886
Total Income Taxes	140,983	136,248	124,853
Income Before Extraordinary Items & Discontinued Operations	178,812	178,272	167,033
Extraordinary Items	0,000	0,000	0,000
Discontinued Operations	0,000	0,000	0,000
Net Income	178,812	178,272	167,033

Attachment 3

ABC AEROSPACE
ABC
SIC: 3812

ANNUAL BALANCE SHEET
($ Millions)

	Jul 19x6	Jul 19x5	Jul 19x4
ASSETS			
Cash and Equivalents	1,244,391	1,068,761	1,140,317
Net Receivables	973,690	1,060,222	830,339
Inventories	717,541	805,275	725,781
Other Current Assets	272,020	275,612	196,060
Total Current Assets	3,207,642	3,209,870	2,892,496
Gross Plant, Property, & Equipment	2,376,203	2,242,557	2,150,177
Accumulated Depreciation	1,128,984	973,171	914,345
Net Plant, Property, & Equipment	1,247,219	1,269,386	1,235,832
Investments at Equity	0,000	20,000	134,000
Other Investments	43,207	50,601	61,442
Intangibles	437,803	451,787	462,576
Other Assets	260,347	256,577	288,136
TOTAL ASSETS	**5,196,214**	**5,257,679**	**5,074,480**
LIABILITIES			
Long Term Debt Due in One Year	18,382	20,192	18,207
Notes Payable	77,874	129,192	28,940
Accounts Payable	695,331	739,282	639,335
Taxes Payable	135,754	170,461	153,815
Accrued Expenses	314,561	277,843	270,901
Other Current Liabilities	370,975	437,327	596,696
Total Current Liabilities	1,612,877	1,774,297	1,707,893
Long Term Debt	1,667,572	1,655,458	1,663,666
Other Liabilities	615,671	560,269	527,553
EQUITY			
Preferred Stock	2,053	2,053	2,053
Common Stock	22,380	24,349	25,425
Capital Surplus	411,875	437,888	443,349
Retained Earnings	863,790	803,367	704,543
TOTAL EQUITY	1,300,098	1,267,657	1,175,370
TOTAL LIABILITIES & EQUITY	**5,196,214**	**5,257,679**	**5,074,480**

Attachment 4